JOURNAL

OF THE

BOSTON SOCIETY

OF

CIVIL ENGINEERS

VOLUME XII

1925

CONTENTS AND INDEX

Published monthly, excepting July and August, by the Society,
715 Tremont Temple, Boston, Massachusetts

Copyright, 1925, by the Boston Society of Civil Engineers.

NOTE. — This Society is not responsible for any statement made or opinion expressed in its publications.

CONTENTS

VOLUME XII, 1925

For alphabetical index, see page vii.

No. 1. JANUARY

PAGE

New England Power Company — Davis Bridge Development. *A. C. Eaton* . 1
Discussion by *Edwin H. Rogers, Harold K. Barrows, Arthur L. Shaw, E. G. Lee, Dwight Porter, Richard A. Hale, D. C. Jackson, Harold C. Whitmore, Richard D. Chase* and *George S. Hewins* 33
Of General Interest:
Dorchester Rapid Transit Extension. *Thomas F. Sullivan* 49
Aerial Surveying 52
What is the "Specific Speed" of a Water Wheel? *Karl R. Kennison* . 52
Builds Ten Miles of 60 and 56 Inch Steel Pipe Line 54
Rubber Pavement in Boston. *Edgar S. Dorr* 54
Proceedings of the Society 57

No. 2. FEBRUARY

Discussion of "Report of the Joint Committee on Standard Specifications for Concrete and Reinforced Concrete:"
The Making of Concrete. *Dean Peabody, Jr.* 63
Beams and Columns. *Charles E. Nichols* 66
Diagonal Tension and Shear in Beams. *Hale Sutherland* 71
Bond and Anchorage in Beams. *Walter W. Clifford* 77
Flat Slabs. *Mark Linenthal* 79
Footings and Retaining Walls. *B. A. Rich* 84
Discussion. *J. R. Worcester* 87
Of General Interest:
To Co-operate with Planning Board 89
Three Useful Publications 90
The Complex 91
A Boiler Drum Built in a Gun Factory 91
Rainfall in Massachusetts in 1924 94
Hydraulic Power Division of N. E. L. A. Meets 94
"L" Shops at Everett 95
Proceedings of the Society 95
Memoirs of Deceased Members:
Frederic I. Winslow 98
Walter E. Parker 99
Charles Hamilton Parker 99

No. 3. MARCH

PAGE

The Preservative Treatment of Ties on the Boston & Maine Railroad. *Frank C. Shepherd* 101
The Sewerage System of the Town of Westerly, R. I. *Thomas McKenzie* . 128
Overcoming Ice Difficulties at the Holtwood Power Plant. *H. W. Lowy* . . 142
Of General Interest:
President Coolidge Signs Temple Bill 150
Cycles of Run-off and Future Trends. *Dana M. Wood* 151
Beverly to get Cast-Iron Pipe from French Foundry 152
Curb Heights and Automobiles 152
Contracts for State Highway Construction 153
Temperatures in Reinforced Concrete Chimney Shells. *E. A. Dockstader* . 153
Proceedings of the Society 156

No. 4. APRIL

Address at the Annual Meeting. *E. H. Rogers* 161
Structural Design Features of a Hydro-Electric Development. *W. D. Henderson* 169
Of General Interest:
Society Receives Gift of $25,000 192
Surprises at Annual Smoker 193
Proceedings of the Society 194
Memoir of Deceased Member — Clarence Henry Rooks 198
Annual Reports for the Year 1924–1925 200

No. 5. MAY

Supports for Superimposed Stacks. *Walter W. Clifford* 221
Construction of the Neponset Bridge. *J. Stuart Crandall* 232
Of General Interest:
Airplane to Aid in Mapping 244
Forty-foot Channel for Boston Harbor 245
Two New Publications 245
Bond in Footings. *Edwin S. Parker* 246
Library Books for Sale 247
Proceedings of the Society 249

No. 6. JUNE

Recent Additions to the Sewerage System and Disposal Works of Framingham, Mass. *F. W. Haley* 253
Problems of the Construction Industry. *R. C. Marshall, Jr.* 276
Discussion by *Leonard C. Wason, William F. Williams* and *Col. Frank M. Gunby* 290
Of General Interest:
Section Prizes Offered 300
Are You a Member of a B. S. C. E. Section? 301
Precise Levels at Springfield, Mass. 301
Memorandum on Periodical Indexes 302
Quantities of Materials for Concrete 303
Proceedings of the Society 303

No. 7. SEPTEMBER

PAGE

The Rapid Transit System of New York City. *Robert Ridgway* . . . 305
Of General Interest:
Highway and Rapid Transit Problems (Boston's Facilities) . . . 326
Dorchester Rapid Transit 327
Metropolitan Planning Division Active 328
Study of Culvert Pipe 328
On French Bridges. *Frederic N. Weaver* 329
Proceedings of the Society 330

No. 8. OCTOBER

Fresh Water Supply for Somerset Station, Montaup Electric Company. *Dana M. Wood* 333
The Development of the Science of Hydraulics. *Edward P. Hamilton* . . 344
Of General Interest:
Protecting the City Plan. *Philip Nichols* 355
New Theories of Flow in Pipes. *Karl R. Kennison* 357
Conference of Planning Boards 358
Leasing of Public Oil Lands 359
Proceedings of the Society 360

No. 9. NOVEMBER

Some Problems of Highway Operation. *G. H. Delano* 365
Discussion by *Lewis E. Moore, Charles B. Breed, Frank O. Whitney, George H. Nye, Raymond W. Coburn* and *Sturgis H. Thorndike* 376
Of General Interest:
New England Power Interests Uniting. *Howard S. Knowlton* . . . 387
Prizes Offered for Highway Essays 389
Widening and Banking of Highway Curves 389
Curing Concrete in a Semi-Arid Climate 392
Proceedings of the Society 393

No. 10. DECEMBER

Modern Conceptions Concerning Foundation Engineering. *Dr. Charles Terzaghi* 397
Discussion by *Charles M. Spofford, Lazarus White, Allen Hazen, George Paaswell* and *Frederic H. Fay* 423
Of General Interest:
Report on Metropolitan Water Supply 440
Boston's Earthquake Hazard 445
Motor Vehicles on Massachusetts' Highways 446
A. S. T. M. Standards 447
Proceedings of the Society 447